DISCUSSION

LEO ELOESSER, M. D. (490 Post Street, San Francisco).—I agree completely with Doctor Gehrels' opinion. The instances can be very exceptional in which a patient and his relatives, once they have made up their minds to have his abdomen opened, would not prefer to take any reasonable operative risk in the hope of his being cured, rather than have him undergo the misery of an operation for nothing or for the short respite that a palliative operation affords. How far the surgeon will go depends upon his technical ability and his willingness to bear the onus of the high mortality that a higher percentage of cures entails.

The statistics cited by Doctor Gehrels may not give a perfectly true picture, for figures taken from municipal mortality records are not entirely comparable to the figures of surgical clinics to which patients go for the express purpose of being operated upon. Still the low percentage of resections, not only in city records but in the Mayo Clinic, is surprising.

I agree also with Doctor Gehrels in warning against two-stage operations in stomach cancer; too often a cancer that was operable at the first stage is found to be inoperable at the second.

A careful physical examination should decide for or against operation; if patients were excluded from operation who have demonstrable distant metastases, such as supraclavicular glands, umbilical metastases, nodules in the peritoneum of the Douglas pouch, bony metastases, and whose obstruction is not sufficient to indicate palliative gastro-enterostomy, both the patient and the surgeon's reputation would be helped.

This salesman of sixty-three, who is kind enough to appear tonight, was referred by Dr. B. J. Hagan with a huge movable abdominal mass. He was very anemic and had a tabes and an aortitis besides. He was operated upon on January 21, 1930; a large cancer of the greater curvature with a crater measuring two inches across was found. The gastrocolic ligament and the transverse colon were invaded. A large portion of the stomach, the mesocolon, and the transverse colon were resected. (Demonstration of specimen.) The man shows no evidence of recurrence, and is working. As Doctor Gehrels remarked, large, seemingly hopeless cancers are not infrequently resectable and remain cured.

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EDMUND BUTLER, M. D. (490 Post Street, San Francisco).—The list of deaths from cancer of the stomach in the city and county of San Francisco or any other municipality contain many cases that are not proven by exploratory laparotomy or autopsy, consequently an error of at least 20 per cent is undoubtedly present. I am surprised to learn so few patients with gastric cancer are operated upon.

I agree fully in every detail with Doctor Gehrels. The skilled surgeon should not be influenced by the high mortality following extensive resection, but be elated over the 12 to 20 per cent of five-year cures.

Finsterer routinely removes the greater omentum in all operations for abdominal neoplasms, hoping to remove any early implants which are more apt to lodge in this structure.

The two points in gastro-intestinal surgery that will bear stressing here are: First, the blood supply of the structures remaining should be sufficient to prevent sloughing. Second, the structures must be sutured without tension.

The permission to do extensive surgery must be had from the family. If relatives understand the import of the procedures, no criticism is forthcoming if sudden death should occur.

There is no statement in Doctor Gehrels' essay that would sanction extensive surgery where the general condition of the patient or the presence of irremovable metastasis precludes success.

THE PROBLEM OF CHRONIC ARTHRITIS*

By ERNEST H. FALCONER, M. D.
San Francisco

AT each annual meeting it is highly important to seek new light, fresh inspiration, and impetus in relation to the problems that bear heavily on us in our daily work. The problem of chronic arthritis has worried and harassed most of us, I am sure. Many members of the profession have become so casual in their efforts to solve this problem that sufferers from arthritis have turned by preference to osteopaths, chiropractors, physiotherapists, and hydrotherapists for help. Are we justified in trying to guide these sufferers back into the fold? Has science advanced far enough along solid ground to offer the chronic arthritic any definite assurance of help? It is perhaps true that nothing remarkable in the field of specific therapy has been brought forth in the last decade. Enthusiasm for vaccine therapy has been spasmodic and usually short-lived. Much groundwork of a careful nature has been quietly laid during the past ten years, and we are in a position today to survey a wide range of data bearing on this problem. A few workers in this country, outstanding among them Ralph Pemberton,[1] have viewed the disease of chronic arthritis in its entirety, conducting research and collecting data that bears on the problem from several different angles, until today we are beginning to envisage the disease as one with an underlying constitutional background and not a local disease of the joints, with its origin in focal infection. For the past fifteen years our attention has been almost entirely directed to focal infection, intensive research has been carried out with the endeavor to solve the problem through the finding of a specific organism which, through toxins or allergic properties, could be shown to cause all the manifestations of chronic arthritis. While this work has been of value it has fallen far short of our hopes for it. That infection is present in chronic arthritis and that it may play a part in the aggravation of symptoms seems to rest on sound evidence, but that these organisms may invade tissues and joints whose vitality becomes lowered from poor circulation and general systemic depletion, part of the picture of the general systemic background of arthritis, seems as logical as to impart to them the primary etiological rôle.

CLASSIFICATION—ATROPHIC AND HYPERTROPHIC TYPES

There has been too much confusion in attempted classification of arthritis. For practical purposes it is sufficient to recognize two main types of the disease, the atrophic and the hypertrophic type. These two main types can be readily separated by clinical and radiological examination. The atrophic variety affects women rather more frequently than men; it is preceded by a long period, often years of fatigue, physical strain, and mental worries. The individual is de-

* Chairman's address, General Medicine Section of the California Medical Association at the sixtieth annual session at San Francisco, April 27-30, 1931.

pleted, blood pressure low, extremities cold and cyanotic, weakness is pronounced, constipation, and at times nausea is present. This type of arthritis frequently occurs on an inherited background. The hypertrophic variety is associated more with advancing years, especially after forty years of age. It represents slowly advancing degenerative changes due to underlying metabolic causes. This is the type that occasions so much disability and economic loss in industrial compensation cases. Here calcium is deposited in excess, in contradistinction to the loss of calcium, the thinning and bony atrophy characteristic of the atrophic variety. In the hypertrophic type the prognosis is much better than in this latter variety, hence the necessity for a clear conception of the type one is dealing with.

During the past year I had the privilege of studying in an arthritic clinic, at the Peter Bent Brigham Hospital, in Boston, under Doctors Hall and Monroe. It was very obvious at once, in reading the histories and examining the patients reporting at the clinic, that it is the atrophic type of the disease that causes patients to seek medical help, largely on account of the deformities and joint pain. Students of the disease are soon able to recognize the types of individuals likely to suffer from chronic arthritis and in these much can be done to prevent and check the progress of the disease. In the arthritic clinic mentioned the relationship of disturbances of the colon to arthritis was the subject of special study under the supervision of Dr. Robert Monroe.[2] Similar studies have been carried on by Doctors Fletcher and Dickson[3] of Toronto. The tone and function of the colon improves considerably under a diet low in carbohydrates and rich in vitamins. The outlines and position of the colon changes under such a regimen, so that subsequent films compared with those taken at the beginning of treatment show marked changes toward what we know as a normal type of colon. Cod-liver oil, yeast concentrates, and orange juice furnish an abundant source of vitamins for the diet. Cutting down the carbohydrates does away with discomfort from fermentation. Studies in calcium absorption and metabolism may help to explain some of the bony changes in both types of arthritis, but especially the atrophic type. Studies on the circulation in chronic arthritis have shown that poor circulation due to low blood pressure, poor vasomotor tone, and constriction of capillary bed are very important factors in bringing about the joint pathology in chronic arthritis. Many of these patients have so much vasoconstriction of the extremities that the thermocouple indicates their reaction to the temperature of their environment to be that of the "cold blooded" invertebrate animals. The temperature of their extremities is that of the room in which they happen to be, hence their extreme sensitiveness to cold. Surgery of the sympathetics controlling the blood supply to the extremities, as carried out at the Mayo clinics through the studies of Rowntree[4] and his associates, has greatly helped some apparently hopeless arthritics. In properly selected cases this promises to be a very helpful measure. The experiments of Pemberton in ligating the blood supply to the patella in animals indicates that the hypertrophic type of arthritis is readily produced experimentally through control of the blood supply.

These brief outlines of some of the recent approaches to the problem will serve to direct our thought toward a somewhat broader viewpoint of chronic arthritis. Even granting that focal infection or, on the other hand, blood-stream infection and joint invasion, as found by Cecil, play an important etiological rôle, is it not logical to believe that rest and building up the resistance through hygienic-dietetic measures may be quite as efficient in helping to remove the infection as surgical removal of foci of infection. If the organisms are in the tissues about the involved joints, as Cecil[5] contends, removal of foci of infection can only accomplish a limited objective. In pulmonary tuberculosis, another type of chronic disease, we recognize the tubercle bacillus as the etiological factor, but our treatment is directed not toward specifics for killing the tubercle bacillus, but to general measures for building up the patient's resistance. One obstacle to success in the treatment of chronic arthritis in the past has been that we have not indicated to the patient that time is an important factor in the treatment as it is in tuberculosis.

As many of you know, there has been a considerable impetus to the study of chronic arthritis in European clinics in the past few years and an association for the study and control of rheumatism is in existence. There is now an American committee with a representative membership whose activities are educational in trying to coordinate and stimulate interest in study, treatment and control of chronic arthritis. At the 1929 meeting of the committee it gave as its concepts of the disease chronic rheumatism or arthritis the following:

CONCEPT OF COMMITTEE CONCERNING THE DISEASE COMMONLY CALLED CHRONIC RHEUMATISM OR ARTHRITIS

1. The disease chronic arthritis, prevalent in all temperate zones, represents one of the most important, if not the most important, of existing social and industrial handicaps.

2. The committee conceives of the disease as a generalized disease with joint manifestations. Certain prodromes may be recognized and it is of vital importance to the body politic that they be recognized.

3. It is the opinion of the committee that at the present time no single infectious agent or any completely defined dietary deficiency or metabolic disturbance has been conclusively shown to be the sole cause of these disorders. The committee inclines to the belief that any one of these factors or certain combinations of these factors, under appropriate circumstances, may basically underlie the onset of the disease.

4. The committee feels it of vital importance that the medical profession have its conscience awakened to the methods of treatment of proved

value which are at present at its disposal. The committee feels that the lay public, through their medical advisers and through the public press, should also be made aware of the danger to their efficiency and happiness which the inroads of the disease imminently threaten.

5. In the light of the foregoing considerations the committee purposes to broadcast, as widely as possible, both to the profession and to the public, its concept of the nature of the types of arthritis included under the heading chronic rheumatism, its belief as to the probable predisposing and exciting causes of the disease, and the knowledge which the committee possesses or may acquire as to the most efficient methods of treatment.

6. It is the belief of the committee that optimism, rather than pessimism, should dominate the attitude of the profession toward this problem. In most cases treatment should represent a combination of the various coördinated measures of therapy rather than one single procedure. Experience leads to the belief that under such circumstances an attitude of optimism toward the control of the disease is justified.

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THERAPEUTIC IRRADIATION OF THE OVARIES*

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DISCUSSION *by William H. Sargent, M. D., Oakland; Edward N. Ewer, M. D., Oakland.*

THIS paper takes up the therapeutic action of roentgen rays and of radium when directed against the ovaries of women suffering from benign gynecological affections, as well as from diseases, remote from the sexual organs *per se,* but which are influenced by the ovaries. The opinions here presented are based on personal experience with some sixty patients.

GENERAL CONSIDERATIONS

The ovary, it may be said without fear of contradiction, occupies a dominant position in the female organism, even if we exclude entirely its function as the organ of reproduction. Its endocrine products, working harmoniously with those of other endocrine glands, are primarily responsible for the development of all the sexual characteristics of women. Upon the ovarian function depends the menstrual cycle, and the growth, and secretory, and other activities of the genital tract proper. The hormones of the ovary also influence such organs as the breasts, the thyroid gland and the pituitary gland, both in health and disease. It is also a fact that the functioning ovaries arrogate to themselves a great proportion of the general bodily energies. This is as it should be in health, but in disease it may prove a serious drain on the disease combating powers of the organism.[3, 4, 23]

Since the ovarian activity has such a profound effect upon the healthy genital tract and body generally, it is readily understood that this function may become quite deleterious, if the genital tract be diseased or ovarian function itself perverted. It is quite probable that such a perverted activity is the cause of menorrhagia, the so-called "benign uterine bleeding." Similarly, according to some, a perverted hormone of the ovary may stimulate to growth fibromyoma of the uterus.

If it is possible to eliminate either temporarily or permanently the ovarian function or to modify it, one may infer that a favorable therapeutic action will have been performed in many gynecologic and general affections. Such a therapeutic action may be accomplished by irradiation of the ovaries by means of roentgen and radium radiation.

The writer believes the action of roentgen ray and radium upon the ovary to be essentially similar. The effect that either of these agents may have upon the normal or pathologic tissues of the genital tract apart from the ovaries will be discussed later.

The epithelial constituents of the ovary are exceeded in sensitivity to radiation only by the lymphatic tissues and their pathological derivatives. In order to explain certain phenomena it may be also assumed that these epithelial constituents of the ovary vary among themselves in sensitivity. Thus the ripe follicles and the ripening ones are destroyed by a certain amount of radiation, whereas the primordial follicles are more resistant to the same amount of radiation and these latter may ultimately, after regaining their vitality, reëstablish the function of the ovary.[3] This observation is utilized therapeutically where it is *not* desirable to permanently eliminate ovarian activity. Seitz and Wintz state that 28 per cent of their skin unit dose, absorbed by the ovary, is necessary to obtain such a temporary "menostasis," or "menolipsis" as they call it.[5] Kadisch has published a table from which the necessary dose has been figured out by Neeff for various ages in "R" (German) units.[4] Recently the writer acquired a "mecapion," an integrating recording dosimeter, made in Austria, which promises much for the future.*

* From the Department of Roentgenology of the Merritt Hospital, Oakland.

* Read before the Radiological Section of the California Medical Association at the fifty-ninth annual session at Del Monte, April 28 to May 1, 1930.

* The construction of the mecapion makes it impossible to insert the ionization chamber into the body cavities, such as the vagina. Since writing the above the writer has convinced himself that phantom measurements are not sufficiently accurate and a second dosimeter which can be inserted into the vagina should be used for such delicate work.